

ICS 13.220.10
CCS C84



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 4351-2023

Replacing GB 4351.1-2005

Portable fire extinguishers

手提式灭火器

Issued on: December 28, 2023

Implemented on: January 1, 2025

**Issued by: State Administration for Market Regulation;
Standardization Administration of China**

Table of Contents

1	Scope
2	Normative references
3	Terms and definitions
4	Classification and model
4.1	Classification
4.2	Model...
5	Performance requirements for fire extinguishers
5.2	Filling requirements
5.3	Discharge performance
5.3.1	Discharge performance at 20°C
5.3.2	Discharge performance in operating temperature range
5.4	Mechanical properties
5.5	Sealing performance
5.5.1	Storage sealing performance
5.6	Corrosion resistance
6	Performance requirements for fire extinguisher components
6.1	Cylinder
6.2	Fire extinguisher valve assembly
6.5	Discharge hose
6.5.2	Configuration and length requirements
6.5.3	Pressure resistance
6.5.4	Low temperature bending performance
6.5.5	Requirements for nozzles and horns of carbon dioxide fire extinguishers
6.6	Filters for water-based fire extinguishers
7	Test methods for fire extinguishers
7.1	Fill inspection
7.2	Discharge performance test
7.3	Mechanical properties test
7.3.2	Vibration resistance test
7.4	Sealing performance test
8	Test methods for fire extinguisher components
8.1	Cylinder test

- 8.1.2 Fire extinguisher cylinders with a service pressure not exceeding
- 8.2 Test of fire extinguisher valve assembly test
- 8.5 Discharge hose test
- 8.5.1 Pressure resistance test
- 8.7 Rubber sealing ring test
- 8.8 Plastic parts test
- 8.10 Fire extinguishing agent test
- 9 Colors and marks
- 9.2 Marks
- 9.2.1 General requirements
- 9.2.3 Operation Instructions
- 10 Instructions...
- 11 Inspection rules...

1 Scope

GB 4351-2023 is the Chinese national standard on portable fire extinguishers, in the field of environment and health protection, safety. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 28 December 2023 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 January 2025. Classification: ICS 13.220.10, CCS C84. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document gives the terms and definitions, classification and models of portable fire extinguishers (hereinafter referred to as fire extinguishers). It specifies the performance requirements, colors and marks, manuals, inspection rules, packaging, transportation and storage of portable fire extinguishers and components. It describes the test methods. This document applies to the design, manufacture and inspection of portable fire extinguishers and their components used in industrial and civil buildings.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 192, General purpose metric screw threads -- Basic profile

GB/T 193, General purpose metric screw threads -- General plan

GB/T 196, General Purpose Metric Screw Threads -- Basic Dimensions

GB/T 197, General purpose metric screw threads -- Tolerances

GB/T 1804, General tolerances -- Tolerance for linear and angular dimensions without individual tolerance indications

GB/T 2516, General purpose metric screw threads -- Limit deviations

GB/T 2828.1, Sampling procedures for inspection by attributes -- Part

1.Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection

GB/T 3181, Colour standard for paint film

GB 4066, Powder extinguishing agent

GB 4396, Carbon dioxide extinguishing agent

GB/T 4423, Copper and copper alloy cold-drawn rod and bar

GB/T 4968, Classification of fires

3 Terms and definitions

For the purposes of this document, the terms and definitions defined in GB/T 4968, GB/T 5907.5, GB/T 13005 as well as the followings apply.

3.1 portable fire extinguishers Carbon dioxide fire extinguishers with a total mass not exceeding 23 kg and other types of fire extinguishers with a total mass not exceeding 20 kg.

3.2 charge of extinguisher The volume (L) of fire extinguishing agent filled in a water-based fire extinguisher or the mass (kg) of fire extinguishing agent filled in other types of fire extinguishers.

3.3 effective discharge time When the fire extinguisher valve is fully opened, the time from the beginning of the extinguishing agent discharging from the fire extinguisher nozzle to the appearance of the gaseous point of the jet flow.

3.4 complete discharge When the fire extinguisher valve is fully open, the internal pressure of the fire extinguisher reaches the state where the external pressure is equal.

3.5 bulk range The distance between the farthest point of the jet and the nozzle of the fire extinguisher when the extinguishing dose is 50%.

4.1 Classification

4.1.1 Portable fire extinguishers are classified according to the extinguishing agent they are filled with.

- a) Dry powder fire extinguisher;
- b) Water-based fire extinguisher (including pure water or water with additives, such as wetting agent, thickener, flame retardant, foaming agent, wet chemical agent, etc.);
- c) Carbon dioxide fire extinguisher;
- d) Clean agent fire extinguisher.

4.1.2 Portable fire extinguishers are classified according to the storage pressure of the propellant.

- a) Pressure-type fire extinguisher;
- b) Gas cylinder-type fire extinguisher.

4.2 Model The model compilation method of portable fire extinguishers is as follows: Enterprise-defined code (indicated by "I, II...", etc.) Equipped with a fixing bracket (omit if not equipped with a fixing bracket) Suitable for car use (omitted for non-car use) Gas cylinder type (omitted for pressure storage type and carbon dioxide fire extinguisher) Filling volume, in kilograms or liters (kg or L) Applicable fire category code ("A" for Class A, "B" for Class B, "AR" for water-based fire extinguishers with solvent resistance, "C" for Class C, "D" for Class D, "E" for Class E, and "F" for Class F)

5.2 Filling requirements

5.2.1 Filling volume The filling volume of the fire extinguisher shall be selected within the following range.

5.2.2 Fill error The fill error of the fire extinguisher shall comply with the requirements of Table 1.

5.2.3 Fill density The fill density of carbon dioxide fire extinguishers shall not exceed 0.75 kg/L and shall comply with the requirements of Table A.1 in Annex A. The fill density of clean gas fire extinguishers shall comply with the safety requirements of the cylinder.

5.3.2 Discharge performance in operating temperature range

5.3.3 Intermittent discharge performance The discharging of fire extinguishers shall be interrupted at any time. The delayed- action time of discharge of the first discharging of fire extinguishers shall not be greater than 5 s. The delayed-action time of discharge of subsequent intermittent discharging shall not be greater than 1 s. The rate of residual